

be excluded except where definitely needed for the study of non-opaque minerals in the specimens. A magnification of about 50 diameters is usually most convenient.

In addition to the features of the minerals brought out by polishing, microchemical tests on the polished surfaces often yield valuable information. Reagents may be applied by glass tubes drawn out to fine points, or by strips of filter paper. Murdoch has found the following most useful:  $\text{HNO}_3$  1:1,  $\text{HNO}_3$  concd., KCN (20% soln.), HCl 1:1, HCl concd., aqua regia,  $\text{FeCl}_3$  (20% soln.) and KOH in concd. soln. Details of the results thus obtained are tabulated in Murdoch's book.

A number of the rarer opaque minerals have never been studied mineralogically, and indeed, the compositions of many that have been thus studied are by no means established, so it is evident that a considerable field for investigation lies open to anyone who cares to take up mineralographic work.

#### PROCEEDINGS OF SOCIETIES

##### NEW YORK MINERALOGICAL CLUB

At the regular meeting held at the American Museum of Natural History on December 13, 1916, there were forty-four persons present, Mr. James G. Manchester presiding.

After the usual routine business the secretary gave notice that on Pavilion Hill, Staten Island, in the Borough of Richmond, New York City, excavations were in progress which afforded a long sought opportunity for the collection of excellent specimens of the Staten Island serpentine and associated minerals.

Dr. Waldemar T. Schaller, of the U. S. Geological Survey, then presented the announced paper of the evening on "The so-called pseudomorphs of the New Jersey zeolite region." He objected to the customary application of the term pseudomorph to the cavities, which should be called molds. The term pseudomorph should be limited to solid replacements of fillings, such as the cores which occur in and fit certain of the molds at McKiernan & Bergin's Quarry in West Paterson. He approved the theories of Allen & Wherry that the rectangular and lozenge-shaped cavities were originally crystals of anhydrite and glauberite respectively, and disapproved of the theory which attributed them to babingtonite. He then reviewed and favored a hydrothermal theory as to the origin of the anhydrite and glauberite. Upon its conclusion questions were asked and the paper was discussed by Messrs. Cahn, Allen, Kunz, Levison and others, and from the tenor of the remarks made it seemed that the theory of the origin of the anhydrite and glauberite proposed was not convincing to everyone. The paper was liberally illustrated with lantern slides and specimens.

Mr. James G. Manchester jointly with Mr. Gilman S. Stanton then presented the second announced feature of the evening, an exhibit of a series of small spessartite garnets cut from a fragment of a transparent crystal they found at Haven Avenue, between 178th and 179th Streets, in the Borough of Manhattan, as the first gem garnet found in New York City.

WALLACE GOULD LEVISON, *Secretary.*

## THE PHILADELPHIA MINERALOGICAL SOCIETY

Wagner Free Institute of Science, December 14, 1916

A JOINT meeting of the Philadelphia Mineralogical Society and The Philadelphia Natural History Society was held on the above date, with President Trudell in the chair, the occasion being a lecture by Dr. Henry Leffmann, on "Meteorites."

The following members were present: Messrs. Allen, Bradford, Bengé, Cameron, Egee, Gordon, Hagey, Jones, Knabe, Leffmann, Rothermel, Trudell, Vanartsdalen, and Warford.

A brief business meeting was held after the lecture. Mr. Knabe reported a trip to Worrall's farm, Upper Providence, Delaware Co., finding andalusite. Mr. Vanartsdalen had visited Sandbrook and Brookville, near Lambertville, without much success.

SATURDAY, MARCH 3, 1917; trip to Wissahickon localities; meet at Ridge Ave. and School Lane at 1.45 P. M. SAMUEL G. GORDON, *Secretary*.

## THE MINERALOGICAL SOCIETY OF GREAT BRITAIN

London, November 7, 1916; Anniversary meeting; MR. W. BARLOW, president, in the chair.

DR. J. W. EVANS: *The combination of twin operations. A modification of the Kohrausch method of determining refractive indices.* The observing instrument is a microscope placed vertically and fitted with a Bertrand lens. An immersion theodolite stage of the Klein type is used so that the substance under investigation may be rotated beneath a liquid of higher  $n$  about two axes, the first at right angles to the optical axis of the instrument, and the second at right angles to the first and to the plane surface of the object. This is observed thru the natural surface of the liquid, and rotated in either direction until the position of total reflection is reached. By rotation of the object about the second axis the refractive indices in all directions parallel to the plane surface may be determined, and the values of the principal refractive indices thus obtained. A. HOLMES AND DR. H. F. HARWOOD: *The basalts of the Brito-Arctic Province.* MISS N. HOSALI exhibited some models of crystals constructed by herself.—*Nature*, **98**, 222-223, 1916.

## THE ROYAL SOCIETY OF GREAT BRITAIN

London, November 2, 1916; SIR J. J. THOMSON, president, in the chair.

SIR WILLIAM CROOKES: *The photographic spectra of meteorites.* Thirty rare earthy meteorites, mostly acquired thru the courtesy of the British Museum Trustees, have been examined. The examination has revealed the presence of unexpectedly large traces of Cr in all the specimens, a condition quite different from that found in the siderites or meteoritic irons, where Cr is practically absent. The proportion between Cr and Ni remains constant in 26 out of 30 aerolites, and is clearly shown in the photographs. In but 3 nickel is almost absent. From the experience gained it has been possible to make a mixture containing known quantities of Ni and Cr, which, with the addition of Fe, produces a spectrum in the neighborhood of the Cr group that is practically identical with that produced by the aerolite Aubres.—*Nature*, **98**, 221, 1916.